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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,319	12/04/2003	Tung-Ming Su	REAP0038USA	1318

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EXAMINER

NATNAEL, PAULOS M

ART UNIT	PAPER NUMBER
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2622

DATE MAILED: 05/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/707,319

Applicant(s)

SU, TUNG-MING

Examiner

Paulos M. Natnael

Art Unit

2622

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-14 and 16 is/are rejected.
- 7) ☒ Claim(s) 15 and 17-19 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>12/4/03</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims **1-12** are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

In claim 1, the claimed the first harmonic mixer lacks antecedent basis.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims **13-14,16** are rejected under 35 U.S.C. 102(e) as being anticipated by Su, U.S. Pat. No. 6,999,747.

Considering claim **13**, Su discloses an admitted prior art (hereinafter, "APA") in Figure 4 that teaches a direct conversion receiver comprising a first mixer 48 that mixes the

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received RF signal to produce an IF signal, a Band Pass filter 52 which filters the IF, a second mixer 56 that mixes the input signal and outputs an in-phase base band signal, and a third mixer 57 that outputs a quadrature- phase base band signal.

As to claims **14**, see the disclosure on col. 2, lines 26-65 which describes the prior art figs. 3 and 4.

Regarding claim **16**, the claimed frequency of the IF signal being fixed is inherent because the desired frequency is predetermined.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims **1-5,7,9** are rejected under 35 U.S.C. 103(a) as being unpatentable over Su, U.S. Pat. No. 6,999,747 in view of Bertonis et al. U.S. Pat. Application Publication No. 2005/0235333 A1.

Considering claims 1,2 and 9, Su discloses an admitted prior art in Figure 4 that teaches a direct conversion receiver comprising a first mixer 48 mixes the received RF signal to produce an IF signal, a Band Pass filter 52, a second mixer 56 which outputs

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an in-phase base band signal, and a third mixer 57 that outputs a quadrature-phase base band signal. The APA does not specifically disclose whether or not the mixer is a harmonic mixer. However, Harmonic mixer are well known in the art. IN that regard, Bertonis teaches a split band customer premises equipment (CPE) architecture disclosing harmonic mixers 427 and 427 as illustrated in Fig.4 and discussed in page 3 paragraph 0029. Therefore, it would have been obvious to the skilled in the art at the time the invention was made to modify the system of the admitted prior art (APA) by providing the teaching of Bertonis in order to obtain stable and reliable reference signals at high frequencies and be able to mix the RF signal with a multiple of such local oscillator signals.

As to claims 3-5,7 see the disclosure on col. 2, lines 26-65 which describes the prior art figs. 3 and 4.

[Please note: Claim 7 is a duplicate of claim 4].

Allowable Subject Matter

7. Claims 6,8, 10-12, 15, 17-19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

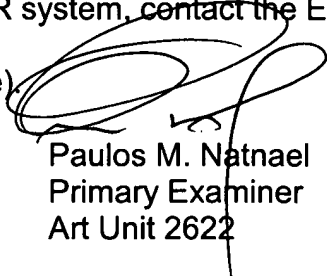
8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Henry et al., U.S. Pat. No. 5,325,129 discloses a harmonic mixer as illustrated in fig.4.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Paulos M. Natnael whose telephone number is (571) 272-7354. The examiner can normally be reached on 9am - 5:30pm M,W, F (7am-3:30pm T,Th).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571)272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Paulos M. Natnael
Primary Examiner
Art Unit 2622

PMN
May 12, 2006